

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

### **RULE 1168 -- ADHESIVE AND SEALANT APPLICATIONS**

*(Adopted April 7, 1989)(Amended March 2, 1990)(Amended Feb. 1, 1991)*

*(Amended July 19, 1991)(Amended August 2, 1991)*

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*(Amended April 11, 1997)(Amended February 13, 1998)(Amended September 15, 2000)*

*(Amended June 7, 2002)(Amended July 12, 2002)*

#### (a) Purpose and Applicability

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) and to eliminate emissions of chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene from the application of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers. This rule applies to all commercial and industrial sales and applications of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless otherwise specifically exempted by this rule.

#### (b) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) ACRYLIC is a thermoplastic polymer or copolymer of acrylic acid, methacrylic acid, esters of these acids, or acrylonitrile.
- (2) ACRYLONITRILE-BUTADIENE-STYRENE (ABS) plastic is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.
- (3) ADHESIVE is any substance that is used to bond one surface to another surface by attachment. Adhesives include, adhesive bonding primers, adhesive primers, adhesive primers for plastics, and any other primer.
- (4) ADHESIVE BONDING PRIMER is an adhesive applied to a surface to improve the bond of subsequent adhesives and sometimes to inhibit corrosion.
- (5) ADHESIVE PRIMER is a coating applied to a substrate, prior to the application of an adhesive, to provide a bonding surface.
- (6) ADHESIVE PRIMER FOR PLASTIC is a material applied to a plastic substrate before applying an adhesive in order to obtain better adhesion.
- (7) ADHESIVE PROMOTER is a coating applied to a substrate in a monomolecular thickness to promote wetting and form a chemical bond with the subsequently applied material.

- (8) ADHESIVE SOLID is the nonvolatile portion of an adhesive that remains after heating a sample of the material at 110°C for one hour.
- (9) AEROSOL ADHESIVE means any adhesive packaged as a aerosol product in which the spray mechanism is permanently housed in a nonrefillable can designed for hand-held application without the need for ancillary hoses or spray equipment. Aerosol adhesives include special purpose spray adhesives, mist spray adhesives, and web spray adhesives, as defined by the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
- (10) AEROSOL SPRAY CAN is a hand held, pressurized, non-refillable container which expels adhesives from the container in a finely divided spray when a valve on the container is depressed.
- (11) AEROSPACE COMPONENT is the fabricated part, assembly of parts, or completed unit of any aircraft or space vehicle (excluding tires), and includes models, mock-ups, prototypes, and test coupons.
- (12) AIRCRAFT means any machine designed to travel through the air, without leaving the earth's atmosphere, whether heavier or lighter than air, including airplanes, balloons, dirigibles, helicopters, and missiles.
- (13) AIRCRAFT TIRE REPAIR is the repair and retreading of used tires used on aircraft. This includes the repair of damage to the tire casing, removal of old tread rubber and tread reinforcing materials, and application of new tread and tread reinforcing materials.
- (14) ARCHITECTURAL APPLICATION is the use of an adhesive, sealant, or adhesive or sealant primer on stationary structures, including mobile homes, and their appurtenances. Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.
- (15) ARCHITECTURAL SEALANT OR SEALANT PRIMER is any sealant or sealant primer applied to stationary structures, including mobile homes, and their appurtenances. Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.
- (16) CARPET PAD ADHESIVE is an adhesive used for the installation of a carpet pad (or cushion) beneath a carpet.
- (17) CERAMIC TILE ADHESIVE is an adhesive used for the installation of ceramic tile products.

- (18) CERAMIC TILES are a ceramic surfacing unit made from clay or a mixture of clay and other materials.
- (19) CHLORINATED POLYVINYL CHLORIDE (CPVC) plastic is a polymer of the chlorinated polyvinyl monomer that contains 67% chlorine and is normally identified with a CPVC marking.
- (20) COATING SOLID is the nonvolatile portion of a coating that remains after heating a sample of the material at 110oC for one hour.
- (21) COMPUTER DISKETTE MANUFACTURING is the process where the fold-over flaps are glued to the body of a vinyl jacket.
- (22) CONTACT ADHESIVE is an adhesive applied to two separate surfaces, allowed to dry, and brought together for adhesion and bonding with subsequent pressure.
- (23) COVE BASE ADHESIVE is an adhesive used during the installation of cove base (or wall base), which is generally made of vinyl or rubber, on a wall or vertical surface at floor level.
- (24) CYANOACRYLATE ADHESIVE is a single-component reactive diluent adhesive that contains at least 85 percent by weight ethyl, methyl, methoxymethyl or other functional groupings of cyanoacrylate.
- (25) DRY WALL ADHESIVE is an adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
- (26) EXEMPT COMPOUNDS are as defined in Rule 102.
- (27) FACILITY means any permit unit or grouping of permit units or other air contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Such above-described groupings, if not contiguous, but connected only by land carrying a pipeline, shall not be considered one facility.
- (28) FIBERGLASS is fine filaments of glass.
- (29) FOAM is a rigid or spongy cellular mass with gas bubbles dispersed throughout.
- (30) GLUE is a hard gelatin obtained from hides, tendons, cartilage, bones, or other parts of animals.
- (31) GRAMS OF VOC PER LITER OF ADHESIVE OR SEALANT, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and adhesive or sealant solids, and can be calculated by the following equation:

Grams of VOC per Liter of Adhesive or Sealant, Less Water and Less

$$\text{Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:  $W_s$  = weight of volatile compounds, in grams  
 $W_w$  = weight of water, in grams  
 $W_{es}$  = weight of exempt compounds, in grams  
 $V_m$  = volume of material, in liters  
 $V_w$  = volume of water, in liters  
 $V_{es}$  = volume of exempt compounds, in liters

For adhesives or sealants that contain reactive diluents, the VOC content of the adhesive or sealant is determined after curing. The grams of VOC per liter of any adhesive or sealant, except a low solids adhesive or sealant shall be calculated by the following equation:

Grams of VOC per Liter of Adhesive or Sealant, Less Water and Less

$$\text{Exempt Compounds} = \frac{W_{rs} - W_{rw} - W_{res}}{V_{rm} - V_{rw} - V_{res}}$$

Where:  $W_{rs}$  = weight of volatile compounds not consumed during curing, in grams  
 $W_{rw}$  = weight of water not consumed during curing, in grams  
 $W_{res}$  = weight of exempt compounds not consumed during curing, in grams  
 $V_{rm}$  = volume of material prior to reaction, in liters  
 $V_{rw}$  = volume of water not consumed during curing, in liters  
 $V_{res}$  = volume of exempt compounds not consumed during curing, in liters

- (32) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material, to be used for a low-solids adhesive or sealant, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:  $W_s$  = weight of volatile compounds, in grams  
 $W_w$  = weight of water, in grams

$W_{es}$  = weight of exempt compounds, in grams  
 $V_m$  = volume of material, in liters

- (33) HAND APPLICATION METHODS is the application of adhesive or sealant by manually held equipment. Such equipment includes paint brush, hand roller, trowel, spatula, dauber, rag, sponges, and mechanically- and/or pneumatic-driven syringes without atomization of the materials.
- (34) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is equipment used to spray a coating by means of a gun that operates between 0.1 and 10 pounds per square inch gauge (psig) air pressure.
- (35) INDOOR CARPET ADHESIVE is an adhesive used during the installation of a carpet that is in an enclosure and is not exposed to ambient weather conditions during normal use.
- (36) LIGHT CURABLE ADHESIVES and SEALANTS are single-component reactive adhesives and sealants that cure upon exposure to visible-light, ultra-violet light or to an electron beam.
- (37) LOW-SOLIDS ADHESIVE is an adhesive which has less than one pound of solids per gallon of material (or 120 grams of solids per liter of material).
- (38) LOW-SOLIDS ADHESIVE PRIMER is an adhesive primer which has less than one pound of solids per gallon of material (or 120 grams of solids per liter of material).
- (39) MARINE DECK SEALANT is any sealant to be applied to wooden marine decks.
- (40) MARINE DECK SEALANT PRIMER is any sealant primer to be applied to wooden marine decks.
- (41) MODIFIED BITUMINOUS PRIMER consist of bituminous materials, and a high flash solvent used to prepare a surface by (1) improving the adhesion and (2) absorbing dust from the surface for adhesive, or flashing cement bitumen membrane.
- (42) MODIFIED BITUMINOUS MATERIALS are materials obtained from natural deposit of asphalt or residues from the distillation of crude oil petroleum or coal which consist mainly of hydrocarbons, and include, but are not limited to, asphalt, tar, pitch, and asphalt tile that are soluble in carbon disulfide.
- (43) MULTIPURPOSE CONSTRUCTION ADHESIVE is any adhesive to be used for the installation or repair of various construction materials,

including but not limited to: drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile, and acoustical tile.

- (44) NONMEMBRANE ROOF ADHESIVE is any adhesive to be used for the installation or repair of nonmembrane roofs. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.
- (45) NONMEMBRANE ROOF SEALANT is any sealant to be used for installation or repair of nonmembrane roofs. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.
- (46) ORTHOTICS AND PROSTHETICS are medical devices designed and fabricated to address human neuromuscular and structural skeletal problems in order to activate, supplement, or replace weakened, atrophied, or missing limbs.
- (47) OUTDOOR CARPET ADHESIVE is an adhesive used during the installation of carpet that is not in an enclosure and is exposed to ambient weather conditions during normal use.
- (48) PANEL ADHESIVE is an adhesive used for the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces.
- (49) PERCENT VOC BY WEIGHT is the ratio of the weight of the VOC to the weight of the material, expressed as a percentage of VOC by weight. The percent VOC by weight can be calculated as follows:

$$\% \text{ VOC weight} = \frac{W_v}{W} \times 100$$

Where:  $W_v$  = weight of the VOCs, in grams  
 $W$  = weight of material, in grams

- (50) PERSON is any individual, firm, association, organization, partnership, business, trust, corporation, company, contractor, supplier, installer, user or owner, or any state or local governmental agency or public district or any other officer or employee thereof. Person also means the United States or its agencies to the extent authorized by Federal law.
- (51) PLASTIC CEMENT WELDING is the use of adhesives made of resins and solvents which are used to dissolve the surfaces of plastic, except ABS, CPVC, and PVC plastic, to form a bond between mating surfaces.
- (52) PLASTIC FOAM is a foam constructed of plastics.

- (53) PLASTICS are synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers. They are used to produce pipe, solid sheet, film, or bulk products.
- (54) POLYCARBONATE is a thermoplastic resin derived from bisphenol A and phosgene, a linear polyester of carbonic acid, dihydroxy compound and any carbonate diester, or by ester interchange.
- (55) POLYETHYLENE TEREPHALATE is a thermoplastic polyester formed from ethylene glycol by direct esterification or by catalyzed ester exchange between ethylene glycol and dimethyl terephthalate.
- (56) POLYETHYLENE TEREPHALATE GLYCOL (PETG) is a glycol modified polyethylene terephthalate.
- (57) POLYURETHANE FOAMS are plastic foams, as defined in "Whittington's Dictionary of Plastics," page 329, and may be either rigid or flexible.
- (58) POLYVINYL CHLORIDE (PVC) plastic is a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine.
- (59) POROUS MATERIAL is a substance which has tiny openings, often microscopic, in which fluids may be absorbed or discharged. Such materials include, but are not limited to, wood, fabric, paper, corrugated paperboard, and plastic foam.
- (60) PRIMER is a material applied to a substrate to improve adhesion of subsequently applied adhesive.
- (61) PROPELLANT is a fluid under pressure which expels the contents of a container when a valve is opened.
- (62) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical and/or physical reactions, such as polymerization, 20 percent or more of the VOC becomes an integral part of a finished material.
- (63) ROADWAY SEALANT is any sealant to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.
- (64) ROLL COATER is a series of mechanical rollers that form a thin coating or adhesive film on the surface roller, which is applied to a substrate by moving the substrate underneath the roller.
- (65) RUBBER FLOORING ADHESIVE is an adhesive that is used for the installation of flooring material in which both the back and the top surface are made of synthetic rubber, and which may be in sheet or tile form.

- (66) RUBBER FOAM is a foam constructed of natural or synthetic rubber.
- (67) SEALANT is any material with adhesive properties that is formulated primarily to fill, seal, or waterproof gaps or joints between two surfaces. Sealants include sealant primers and caulks.
- (68) SEALANT PRIMER is any product applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.
- (69) SHOE REPAIR, LUGGAGE AND HANDBAG ADHESIVE is an adhesive used to repair worn, torn or otherwise damaged uppers, soles, and heels of shoes, or for making repairs to luggage and handbags.
- (70) SHEET-APPLIED RUBBER LINING OPERATION is the hand application of sheet rubber lining to metal or plastic substrates in order to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric.
- (71) SINGLE-PLY ROOF MEMBRANE ADHESIVE is any adhesive sealant to be used for the installation or repair of single-ply roof membrane. Installation includes, but is not limited to attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.
- (72) SINGLE-PLY ROOF MEMBRANE SEALANT is any sealant to be used for the installation or repair of single-ply roof membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.
- (73) SOLVENT WELDING is the softening of the surfaces of two substrates by wetting them with solvents and/or adhesives, and joining them together through a chemical and/or physical reaction(s) to form a fused union.
- (74) SPACE VEHICLE is a vehicle designed to travel beyond Earth's atmosphere.
- (75) SPECIAL PURPOSE CONTACT ADHESIVE is a contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber and wood veneer 1/16 inch or less in thickness to any porous or nonporous surface.
- (76) STRUCTURAL GLAZING ADHESIVE is any adhesive to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
- (77) STRUCTURAL WOOD MEMBER ADHESIVE is an adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.



- (78) SUBFLOOR ADHESIVE is an adhesive used for the installation of subflooring material over floor joists.
- (79) THIN METAL LAMINATING is a process of bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mil.
- (80) TIRE REPAIR is the expanding of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.
- (81) TIRE RETREAD ADHESIVE is any adhesive to be applied to the back of precured tread rubber and to the casing and cushion rubber, or to be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.
- (82) TOP AND TRIM ADHESIVE is an adhesive used during the installation of automotive and marine trim, including, but not limited to, headliners, vinyl tops, vinyl trim, sunroofs, dash covering, door covering, floor covering, panel covering and upholstery.
- (83) TRAFFIC MARKING TAPE is preformed reflective to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.
- (84) TRAFFIC MARKING TAPE ADHESIVE PRIMER is any adhesive primer to be applied to surfaces prior to installation of traffic marking tape.
- (85) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.
- (86) VCT means vinyl composition tile and is a material made from thermoplastic resins, fillers and pigments.
- (87) VISCOSITY is the internal friction of a liquid that makes it resistant to flow.
- (88) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 - Definition of Terms.
- (89) WOOD FLOORING ADHESIVE is an adhesive used to install a wood floor surface, which may be in the form of parquet tiles, wood planks, or strip-wood.
- (90) WOOD PARQUET FLOORING is wood flooring in tile form constructed of smaller pieces of wood which are joined together in a pattern by the maker to form the tile.
- (91) WOOD PLANK FLOORING is solid or laminated wood in plank form.

**(c) Requirements**

- (1) Unless otherwise specified in paragraph (c)(2), a person shall not apply any adhesives, adhesive bonding primers, adhesive primers, or any other primer which have a VOC content in excess of 250 g/L less water and less exempt compounds.
- (2) A person shall not apply adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primer which have a VOC content in excess of the limits specified below:

**VOC Limit\*, Less Water and Less Exempt Compounds in Grams per Liter**

<b>Architectural Applications</b>	<b>Current VOC Limit</b>
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

Specialty Applications	VOC Limits and Effective Dates**				
	Current VOC Limit	6-7-02	1-1-03	1-1-04	1-1-05
PVC Welding	510				285
CPVC Welding	490				270
ABS Welding	400				
Plastic Cement Welding	350				250
Adhesive Primer for Plastic	650				250
Computer Diskette Manufacturing	350				
Contact Adhesive	250		80		
Special Purpose Contact Adhesive	250				
Tire Retread	100				
Adhesive Primer for Traffic Marking Tape	150				
Structural Wood Member Adhesive	140				
Sheet Applied Rubber Lining Operations	850				
Top and Trim Adhesive	250	540		250	

\*\* The specified limits remain in effect unless revised limits are listed in subsequent columns.

Substrate Specific Applications	Current VOC Limit
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass	80

If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

<b>Sealants</b>	<b>Current VOC Limit</b>
Architectural	250
Marine Deck	760
Nonmembrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420

<b>Sealant Primers</b>	<b>Current VOC Limit</b>
Architectural	
Non Porous	250
Porous	775
Modified Bituminous	500
Marine Deck	760
Other	750

\* For low-solid adhesives or sealants the VOC limit is expressed in grams per liter of material as determined in paragraph (b)(32); for all other adhesives and sealants, VOC limits are expressed as grams of VOC per liter of adhesive or sealant less water and less exempt compounds as determined in paragraph (b)(31).

- (3) Containers used to dispose of VOC-laden cloth or paper used in stripping cured adhesives or sealants shall be closed except when depositing or removing VOC-laden cloth or paper from the container.
- (4) Solvent Cleaning Operations; storage and disposal of VOC-containing materials shall be conducted in accordance with the provisions of Rule 1171 - Solvent Cleaning Operations.
- (5) Transfer Efficiency  
A person shall not apply adhesives or sealants unless the adhesive or sealant is applied with properly operating equipment in accordance with operating procedures specified by either the equipment manufacturer or the Executive Officer. Application of adhesives or sealants shall be accomplished only by the use of one of the following methods:
  - (A) Electrostatic application; or
  - (B) Flow coat; or
  - (C) Dip coat; or

- (D) Roll coater; or
  - (E) High-Volume, Low-Pressure (HVLV) spray; or
  - (F) Hand application methods; or
  - (G) Such other adhesive or sealant application methods as are demonstrated to the Executive Officer to be capable of achieving at least 65 percent transfer efficiency and for which prior written approval of the Executive Officer has been obtained; or
  - (H) For adhesives and sealants with a viscosity of 200 centipoise or greater, as applied, airless spray, air-assisted airless, and air-atomized spray may also be used.
- (6) A person may comply with the provisions of paragraphs (c)(1), (c)(2), or (c)(5), or all three, by using approved air pollution control equipment, provided that the VOC emissions from such operations and/or materials are reduced by at least 80 percent overall, by weight.
  - (7) A person may comply with the provisions of paragraph (c)(1) and paragraph (c)(2) by means of an Alternative Emission Control Plan pursuant to Rule 108.
  - (8) If anywhere on the container of any adhesive or sealant, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the adhesive or sealant may be used for any another source specific rule application, for which there is a lower VOC standard, then the lowest VOC standard shall apply.
  - (9) The VOC content of adhesives and sealants that are applied with the use of refillable pressurized containers are subject to the VOC limits of this rule.
- (d) **Reporting Requirements**
- Manufacturers that offer for sale and use PVC, CPVC, and other plastic cement welding products and associated primers in the District shall, beginning March 8, 2003, and at annual intervals thereafter, submit a status report that describes the progress toward the development of alternative products which satisfy future VOC limit compliance dates. These reports shall contain, at a minimum:
- (1) Manufacturer, product or test number, VOC content, and applicable material category for each of the test candidates;
  - (2) Progress of candidates tested during this period relative to ASTM D-2564 standards, and National Sanitation Foundation (NSF) approval for use on potable water, sewer, drain, waste and vent systems.

Once compliance with future VOC limits is achieved and a status report is submitted documenting such, no further reports need be submitted for that particular plastic cement welding product or primer, or alternative product.

(e) Recordkeeping Requirements

Notwithstanding provisions of subdivision (j), records shall be maintained pursuant to Rule 109.

(f) Methods of Analysis

- (1) The VOC content of cleaning materials and adhesives or sealants shall be determined by using USEPA Reference Method 24 (Determination of Volatile matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating, Code of Federal Regulations Title 40, Appendix A, utilizing Procedure B of ASTM Method D2369), or the SCAQMD Method 304.
- (2) The exempt compound's content shall be determined by Methods 302 and 303 in the South Coast Air Quality Management District's (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples" or ASTM Method D4457-85.
- (3) The VOC content of PVC, CPVC, and ABS pipe cements, adhesive primer for plastic shall be determined by Method 316A in the South Coast Air Quality Management District's (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples."
- (4) The VOC content of cyanoacrylate adhesives shall be determined by Method 316B in the South Coast Air Quality Management District's (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples."

(g) Test Methods

- (1) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by USEPA'S Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and USEPA's Test Methods 25, 25A, SCAQMD's Method 25.1, or SCAQMD Test Method 25.3. (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.

- (2) Viscosity will be determined by ASTM D 1084-88.
  - (3) The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.
- (h) Prohibition of Specifications
  - (1) A person shall not solicit or require any other person to use, in the District, any adhesives or sealants or combination of adhesives or sealants in violation of the requirements of this rule.
  - (2) The requirements of this paragraph shall apply to all written or oral agreements executed or entered into after July 1, 1989.
- (i) Prohibition of Sales and Use
  - (1) On and after September 1, 2001, except as provided in subdivision (k), paragraphs (c)(6) and (c)(7), no person shall use, supply, sell, or offer for sale an adhesive, sealant, or adhesive or sealant primer for use in the District that at the time of sale exceeds the applicable VOC limits specified in paragraphs (c)(1) and (c)(2).
  - (2) On and after January 1, 2004, no person shall use, supply, sell, or offer for sale an adhesive, sealant, or adhesive or sealant primer for use in the District that contains chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene.
  - (3) The prohibition of sales and use as specified in paragraphs (i)(1) and (i)(2) shall not apply to the following:
    - (A) Adhesives and sealants shipped, supplied or sold to persons for use outside the District;
    - (B) Any manufacturer of adhesives or sealants, provided that the manufacturer has complied with the labeling requirements of Rule 443.1 – Labeling of Materials Containing Organic Solvents, and the

product is not sold directly to a user located in the District, or the product was sold to an independent distributor or a sales outlet located in the District that is not a subsidiary of, or under the control of the manufacturer, and was informed in writing by the manufacturer about the compliance status of the product with Rule 1168;

- (C) Adhesives and Sealants that contain less than one percent by weight of methylene chloride; or
- (D) Solvent welding formulations containing methylene chloride used to bond hard acrylic, polycarbonate, and polyethylene terephthalate glycol plastic fabrications, until January 1, 2005.

(j) Rule 442 Applicability

Any adhesive, sealant, adhesive or sealant application, operation, or person which is exempt from all or a portion of this rule, shall comply with the provisions of Rule 442.

(k) Exemptions

- (1) The provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to the following:
  - (A) Adhesives used in tire repair; or
  - (B) Adhesives and/or adhesive application processes in compliance with Rules 1104, 1106, 1128, 1130 and 1130.1.
- (2) The provisions of this rule shall not apply to aerospace components that are subject to Rule 1124.
- (3) The provisions of paragraph (c)(5) and subdivision (e) shall not be applied to the application of adhesives or sealants that contain less than 20 g/L of VOC per liter of adhesives, less water and less exempt compounds.
- (4) The provisions of this rule shall not apply to any facility that uses less than one pint of total adhesives and sealants in any one day so long as the products were purchased prior to September 15, 2000.
- (5) The provisions of subdivision (c) shall not apply to research and development programs and quality assurance labs, provided that:
  - (A) A record is kept of:
    - (i) the date when the adhesives and sealants are used, and the type of application(s); and



- (ii) the amount of adhesives and sealants used and the VOC content of such adhesives and sealants; and
    - (iii) the amount of solvents used and VOC content of such solvents; and
    - (iv) the manufacturer/suppliers identification and type of material; and
  - (B) Such records shall be retained in accordance with the provisions of subdivision (e) of this rule.
- (6) The provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to a facility that demonstrates that the total volume of non-compliant adhesives, adhesive primers, adhesive bonding primers, sealants, and sealant primers is less than 55 gallons per facility per rolling 12-month period. On and after September 1, 2001, a facility may not use this paragraph to exclude non-compliant adhesives used in architectural applications, contact adhesives, special purpose contact adhesives, and adhesives used on porous substrates.
  - (7) The provisions of this rule, except paragraph (i)(2), shall not apply to adhesives used to glue flowers to parade floats.
  - (8) The provisions of subdivision (c) shall not apply to solvent welding operations used in the manufacturing of medical devices.
  - (9) The provisions of this rule shall not apply to aerosol adhesives and primers dispensed from aerosol spray cans.
  - (10) The provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to any adhesive used exclusively for thin metal laminating operations, provided that the adhesive contains less than 780 grams of VOC per liter of adhesive, less water and less exempt compounds, as applied, and the facility uses a total of three gallons per day or less of these adhesives.
  - (11) The provisions of this rule, except paragraph (i)(2), shall not apply to light curable adhesives and sealants.
  - (12) The provisions of this rule, except paragraph (i)(2), shall not apply to the use of cyanoacrylate adhesives.
  - (13) The provisions of this rule shall not apply to adhesives and sealants subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
  - (14) Until October 1, 2003, the provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to solvent welding of flexible ductwork, at which time

the VOC limit shall be 250 grams per liter, less water and less exempt compounds.

- (15) A person may sell or apply a non-complying VOC-containing or methylene chloride-containing product for one year after the applicable effective date in paragraph (c)(2) for VOC-containing adhesives and sealants, and for one year after the applicable effective date of paragraph (i)(2) or subparagraph (i)(3)(D) for methylene chloride-containing adhesives and sealants, provided:
  - (A) The product complies with the previous applicable VOC limit,
  - (B) The product was manufactured prior to the effective date, and
  - (C) The date of manufacture or a code indicating that date is clearly displayed on the product.
- (16) The provisions of this rule, except paragraph (i)(2), shall not apply to adhesives used to fabricate orthotics and prosthetics under a medical doctor's prescription.
- (17) The provisions of this rule, except paragraph (i)(2), shall not apply to shoe repair, luggage and handbag adhesives.